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Chapter 1

The internationalization - performance relationship: findings from a set of Polish listed manufacturing companies

Introduction

This paper deals with the relationship between firms' international activities and their performance levels. More than 100 studies have explored this relationship over the last three decades (Ruigrok, Wagner, 2004). Despite increased attention from both international business scholars and practitioners the issue of the economic consequences of international diversification still remains underexplored. Empirical evidence support linear (both positive and negative) as well as non-monotonic (quadratic and cubic) forms. Inconclusive results led researchers to the question whether the performance impact of internationalization is universalistic across company nationalities or it is context dependent. Ruigrok and Wagner (2004) in their metaanalysis showed that the performance impact of internationalization is indeed context dependent, contingent upon the home-country internationalizing trajectories (Ruigrok, et al., 2007). The majority of previous studies were based on firm samples from developed countries: United States, Western Europe, Japan. Hence, there is little known about the international diversification–performance relationship in the context of emerging market firms. This study contributes to the body of literature in three ways. First of all, it uses a current sample of Polish listed companies. Furthermore, the study not only examines the financial performance, but also uses an operational (based on costs) measure of company's performance. Finally, a set of country-level variables is tested. The paper is organized as follows. In the next section theory on international diversification is discussed and literature review is presented. A synthesis leads to hypothesis formulation in section 2. The data and methodology are presented in section 3. Section 4 concludes the paper.

Conceptual Framework

Early studies were directed at exposing the nature of the relationship assuming the linear form of the multinationality-performance relationship. Several studies found evidence of a positive relationship, others found no relationship or a negative relationship (for reviews see i.a. Contractor et al. (2003) and Hitt et al. (2006)).

These conflicting findings have suggested that a potential explanation for the previously mixed results is that the multinationality-performance relationship is nonlinear (Sullivan, 1994). If a non-linear curve best

reflects the internationalization–performance relationship, linear regressions lead to misleading findings (Ruigrok et al., 2007). More recently, scholars have begun to assume a quadratic form of the relationship but findings remained still inconclusive. Researchers found evidence in support of a U-shaped form (e.g., Capar, Kotabe, 2003; Ruigrok, Wagner, 2003) and an inverted U-shaped form as well (e.g., Geringer et al., 1989; Gomes, Ramaswamy, 1999; Hitt, Hoskisson, Kim, 1997). Latest attempt to reconcile the seemingly contradictory results assumes cubic (horizontal S-shaped) form of the relationship (e.g., Contractor, 2007; Contractor et al., 2003; Lu, Beamish, 2004; Riahi-Belkaoui, 1998).

The conceptual logic of this research stream rests on incremental benefits and costs of firm's internationalization and their interplay along the internationalization continuum. The word 'incremental' refers to the benefit increase/decrease (or cost increase/decrease) obtained by a one-unit degree of internationalization (DOI) increase (e.g., from 50 to 51%) (Ruigrok et al., 2007). The main scholarly approaches towards the issue of general benefits and costs of an internationalization strategy are discussed below.

Benefits of internationalization

According to **internalization theory** a firm profits from bypassing imperfections (costs) in foreign markets. Firms internalize transactions and bring them under organizational control if internal costs related to transactions made within an institution are lower than the transaction costs on the free market. Firm can reduce its costs through avoiding (Giddy, 1978 after: Buckley, 2002):

- concentrated markets for raw materials and arm's length supply which may be both expensive and risky,
- imperfect markets for firm's resources created by brand names,
- imperfect markets for outputs due to monopolistic control over distribution channels –a significant factor in many small countries,
- imperfect markets for product resources because of government imposed barriers to entry, such as tariffs.

Theory of portfolio diversification by Markowitz (1959) indicates a possibility of reduction the risk of a portfolio of securities by investing in assets whose returns were uncorrelated. By analogy, MNE can lower risk at any given level of returns if it has activities located in a portfolio of countries which are not economically integrated (Shapiro, 1978) because of asynchronous business cycles (e.g., Siddharthan, Lall, 1982). It can smooth out foreign exchange volatility with multi-currency cash flows and confer operational and strategic flexibility because of having plants in several nations (Contractor, 2007). Operating in many markets can also result in stabilising sales revenue. Hence, geographical diversification leads to lower risk (at any level of profit).

International diversification allows firms also to achieve **economies of scale** (to spread fixed costs over a larger market) and **scope** (savings obtained by simultaneous production of different products, serving different markets or performing different operations in vertical technological chain (Otta, 1994)).

Resource-based view of the firm underlines the application of the bundle of resources at the firm's disposal in creating competitive advantage of the firm. By a resource are meant tangible and intangible assets which can be considered in terms of a strength or weakness of a given firm (Wernerfelt, 1984). Internationalization gives a chance for an increase in the economic rent that accrues to firm-specific resources (Hsu, Pereira, 2008). The main source of internationalization benefits in this view is a proactive development of company-internal comparative advantages in international environment based on firm's unique competencies. Learning opportunities along the internationalization continuum provide firms with cumulative knowledge (Ruigrok, Wagner, 2003). Firms competing in several different countries, capable of generating, combining, and transferring intangible assets or tacit knowledge within operating units benefit from organizational learning (Ruigrok, Wagner, 2003). Internationalization enables MNEs to learn about foreign markets, transfer knowledge across borders, exploit it and establish a competitive advantage relative over their rivals (Hsu, Pereira, 2008).

Theory of operational flexibility (Kogut, 1985) suggests that firms operating in multiple environments can generate arbitrage (exploitation of differences in prices of assets, products, production factors

between markets) and leverage (creation market or bargaining power because of firm's global position) opportunities. Arbitrage in context of MNE refers to ability to shift production to respond to movements in exchange rates, minimize tax bills (transfer price mechanism, remittance channels to realize profits in low tax jurisdiction), take advantage from arbitrage in financial markets and access to information in world markets (Kogut, 1985). MNE can also access cheaper inputs (i.e. labour). Leverage gains are attributed to price differentiation in relation to firm's competitive position which creates possibility to cross-subsidize between regions, overseas coalition building in order to affect behaviour of rivals and exercise of bargaining power.

Costs of internationalization

The concept of disadvantages faced by foreign firms was introduced by Stephen Hymer in 1960. He noticed that enterprises entering foreign markets face additional costs compared to local rivals. Barrier inducing fixed cost arise from the lack of information about the country: its economy, language, law and politics. Costs of acquiring such information may be substantive. Costs of permanent character stem from discrimination by government, suppliers and customers and exchange rate risk. The Hymer's concept laid the foundation for studies on liability of foreignness.

The concept of **liability of foreignness** is focused on structural/relational and institutional costs of doing business abroad associated with a foreign firm's network position in the host country and its linkages to important local actors. Network position of internationalizing firm in the local market is less developed relative to those of a local enterprises and results in poorer access to local information and resources. Institutional costs refer to the degree of difference/similarity between the regulatory, cognitive and normative institutional environments¹ of two countries Kostova (1998).

Liability of foreignness can be decomposed into three hazards that affect foreign firms disproportionately to local firms in the host country (Zaheer, 2002; Eden, Miller, 2004):

- **unfamiliarity hazards** reflecting the lack of knowledge of or experience in the host country, which places the foreign firms at a disadvantage compared to local firms,
- **discrimination hazards** stemming from the discriminatory treatment of foreign firm relative to local firms in the host country by the home or host governments, consumers or the general public in the host country. This component contains political hazards and consumer ethnocentricity in the host country,
- **relational hazards** inducing two types of costs. First type is related to managing operations at a distance generated by the increased transaction costs and managerial information processing demands of managing complex, highly internationally diversified firms. The second one is connected with inter-organizational relations and contains additional costs of negotiating, monitoring and dispute settlement incurred with arm's length modes of entry into foreign market, as well as costs of building trust related to cooperative modes of entry.

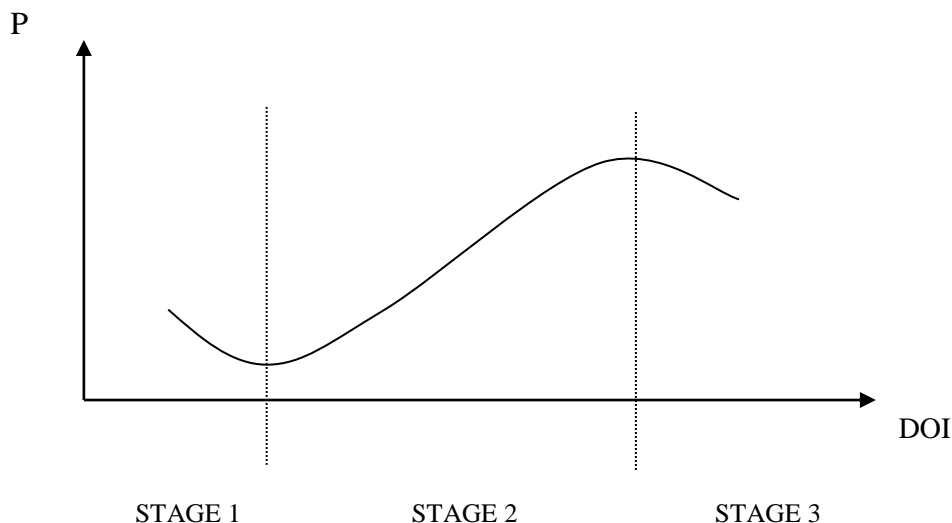
In more recent work of Sethi and Judge (2009) emphasise that multi-country operations, alliances and networks are the norm arising from interdependent global economic system. Increasing complexity of global business and nature of internationalization creates the need to distinguish the multilateral concept of **liability of multinationality** from bilateral (dyadic) term liability of newness. The authors define liability of multinationality as "additional costs incurred by the MNE subsidiary in interacting with entities outside the host-country's context". The authors enumerate following examples of this category: costs associated with spatial distance and working across different time zones, coordination cost of multi-country operations, complexities associated with transacting with the MNE's global network of subsidiaries and alliances, costs of constraints imposed by parent MNE on subsidiary strategy, costs of monitoring and coping with interdependent regional and global environments, costs related to exchange rates volatility, costs of monitoring trade policies and deliberations of multilateral economic institutions and finally, costs of missed regional or global multipoint pricing options. This category of costs of internationalization may be particularly important for the internationalization-performance relationship since these costs remain variable, unpredictable and fluctuates with type and number of multilateral dependencies while costs related to

liability of foreignness are believed to progressively reduce over time due to organizational learning. This belief is in line with transaction cost theory which assumes rise in managerial information and processing demands, coordination costs and information asymmetries as consequences of progressing internationalization.

Literature review

Table 1 reviews past research on internationalization-performance relationship based on samples of emerging market firms. These studies' findings show no consensus about shape if the link. Researchers found evidence in support of a linear form as well as non-linearity hypothesis. The recently proposed 3-stage theory² based on a sigmoid model is an attempt to reconcile these seemingly conflicting results by suggesting that linear, U-shaped and inverted-U-shaped results are simply subsets of the 3-stage sigmoid curve shown in figure 1 (Contractor, 2007). The S-shaped model has quickly established itself in the literature as a “benchmark” or “general” theory (Glaum, Oesterle, 2007).

FIGURE 1.1 The general sigmoid 3-stage model



Source: Contractor, 2007.

The conceptual logic underlying cubic (S-shaped) model is that internationalization benefit-cost trade-off varies along the internationalization continuum. For most of the range (Stage 2), incremental benefits outweigh the incremental costs of internationalization. However in Stage 1 (initial or early internationalization) as well as in Stage 3 (excessive internationalization) incremental costs are greater than incremental benefits. The underlying assumptions of this shape are as follows:

In the initial phase of international expansion (Stage 1), firm encounters liability of foreignness. There are also significant costs of learning about new countries and cultures, as well as local adaptation costs (Contractor, 2007). These costs can outweigh the incremental benefits of internationalization (e.g., cost savings, tax benefits) as economies of scale are insufficient in this phase of international expansion (Contractor et al., 2003). Performance decline at this stage is assumed to be relatively shallow and short, but will vary by sector, home and foreign market characteristics (Contractor, 2007).

In phase 2 increasing levels of internationalization are associated with recover and growth in a firm's profitability due to costs decrease and benefits rise. In this stage MNE benefit from: knowledge acquired

from abroad, international arbitrage, exploitation of firm-specific assets on foreign markets, growth in market power, risk reduction, economies of scale and scope (Contractor, 2007). During the 3rd phase governance and coordination costs begin to rise due to increased organizational and environmental complexity. International expansion beyond a threshold (depending on the particular sector) leads to a reduction in profits. This phase is expected to be shorter than Stage 2 (Contractor et al., 2003). According to this general theory statistically fitted curves may turn out to be U-shaped if Stages 1 and 2 predominate in the sample firms; inverted-U-shaped if Stages 2 and 3 are heavily represented in other company samples, linear positive if Stage 2 is prevailing or negative otherwise (Stages 1 and 3). This model does not explain an inverted S - shaped curve evidenced by Chiang, Yu (2005) and Ruigrok et al., (2007). Findings of these studies suggest that the actual shape of the internationalization-performance relationship is more dependent on the home-country attributes of internationalizing firms than other studies assume.

Hypotheses

This study focuses on Polish listed companies. For the most part, Polish firms have commenced their international expansion since 1989³. Following Thomas (2006) it is argued that Polish companies alike Mexican firms have just begun to expand internationally and, as a result - will likely face high costs at the beginning of their internationalization path due to collective inexperience in operating in foreign markets. These initial costs are related to cultural differences, managerial inexperience in operating in competitive environments, transportation and logistical challenges, and marketing, brand and technological disadvantages. Moreover, the institutional environment in emerging markets has made it difficult for firms to develop the necessary managerial and technological competence to operate in foreign markets, especially developed markets (Thomas, 2006). Hence, opportunity to learn is very important for Polish companies. They do exploit existing resources and advantages in foreign markets, but first of all – focus on knowledge and resources acquisition. High initial costs of foreign entry and possible short-term losses caused by learning process will result in short term performance decline during the first stage of their international expansion. After the initial decrease in performance they will however gain positive returns from foreign markets experience. The outcomes of organizational learning, acquired advantages and managerial knowledge will result in performance increase as in stage 2 of sigmoid model (see Figure 1.) Given that Polish firms, just as Mexican, are generally in the initial stages of their internationalization, it is not expected that Polish firms on average will fall into 3rd phase of the sigmoid model. The governance and coordination costs will not be that high to lead to subsequent performance decline. Building on the aforementioned three stage model of internationalization-performance relationship the argument for U shaped relationship for Polish firms is being introduced.

Hypothesis 1

There is a curvilinear relationship (U shaped) between international diversification and performance in Polish firms.

Methods

Sample

Data were collected from financial statement of selected companies listed on the Warsaw Stock Exchange (Polish stock market). As there are a priori reasons to believe that the internationalization-performance linkage in case of industry companies will be different as compared to service firms (Contractor et al., 2007), the study is focused on industry companies exclusively. The sample study consists of firms belonging to Chemicals, Machinery and Electrical Equipment, Plastics, Pharmaceuticals sectors of WSE (state on 6th February 2009). The sample period ranges from 2003 to 2008.

TABLE 1.1 Previous inquiries into Internationalization-Performance link in emerging market context

| Author(s) and Year | Sample and Time Period | Key Variable Operationalization | Independent and Control Variables | Results (shape of the I-P relationship) |
|---|--|--|---|---|
| Chiang, Yu 2005 | 119 non-financial Taiwan firms; 1998 - 2002 | DOI: FATA Performance: ROE | Firm size Industry dummies Geographic region of host country dummies | Inverted S-curve |
| Chiao, Yang, Yu 2006 | 818 electronics and 601 textile Taiwan SMEs; 1996 | DOI: Export/Total sales Performance: ROS | R&D intensity Advertising intensity Firm size Debt ratio | Inverted U-curve |
| Elango 2006 | 719 firms from 12 emerging markets; (manufacturing and service firms); 1996-2000 | DOI: FSTS Performance: Gross Profit Margin | Governance Market Growth Rate Firm size Firm debt ratio Firm growth rate Industry dummy | Inverted U-curve for manufacturing firms (51% threshold); positive linear for service firms |
| Thomas 2006 | 386 from the list of 500 largest Mexican (manufacturing and service) firms; 1994–2001 | DOI: FSTS Performance: ROS | Firm size Foreign ownership Technological Intensity Geographic distance (from U.S. border) Firm structure dummy (subsidiary, independent) Industry dummies | U-curve |
| Contractor, Kumar, Kundu 2007 | 269 Indian firms; (manufacturing and service firms); 1997-2001 | DOI: FSTS Performance: ROA, ROE, ROS | Firm size Firm age Industry sub-sectors dummies | U-curve for manufacturing firms; positive linear for service firms |
| Fleury, Borini, Fleury, de Oliveira Junior 2007 | 118 from list of 500 largest Brazilian companies in 2005 | DOI: Export/Total sales Performance: EBITDA/Total sales | Firm size Industry dummies | Inverted J-curve |
| Chen, Hsu 2009 | 224 Taiwan high-tech firms with experience in FDI; 2000-2005 | DOI: the total number of foreign countries in which they had subsidiaries in a given year Performance: EBIT | R&D expenditures Advertising expenditures Strategic emphasis (Advertising expenditures–R&D expenditures)/Assets) International experience Firm size | Inverted U-curve |
| Pattnaik, Elango 2009 | 787 Indian manufacturing firms with sales of at least 50 million Indian Rupees (1 million USD); 2000-2003 | DOI: FSTS Performance: ROE | Age Market power Firms product line Diversification Marketing intensity Researcher intensity Cost efficiency Group scope Group size Industry dummies Year dummies | Inverted U-curve |

Variable operationalization

Internationalization

To measure degree of internationalization (I) the ratio of foreign sales to total sales (FSTS) was used. This indicator reflects sales-oriented expansion (Ruigrok, Wagner, 2003). Its application is justified by the fact that export still remains the main mode of internationalization of Polish enterprises. As FSTS is most used indicator in previous studies, its application enables cross-study findings comparison. The usage of other indicators for degree of company internationalization (e.g., number of foreign markets, foreign assets to total assets, foreign subsidiaries to total subsidiaries) was limited by lack of sufficient data.

Performance

To measure company's performance (P) two indicators were employed. Return on assets (ROA) was applied as most frequently used financial performance indicator in previous studies. Following study of German firms (Ruigrok, Wagner, 2003), cost efficiency of companies was reflected by OCTS measure (Operating Costs to Total Sales) defined as the sum of firm's material costs and employee costs divided by total sales. It is believed that OCTS, as a measure of cost efficiency, assesses measure more directly the impact of internationalization than aggregate firm-level profitability ratios (Ramaswamy, 1992).

Methodology

Using past research as a guide, there were included several control variables. The fundamental regression model employed in this study can be written as follows:

$$P = \alpha_1 + \alpha_2 I + \alpha_3 I^2 + \alpha_4 I^3 + \alpha_5 S + \alpha_6 L + \alpha_7 B_1 + \alpha_8 B_2 + \alpha_9 B_3 + \alpha_{10} KZ + \eta$$

where:

P - company's performance (ROA, OCTS),

I - degree of internationalization (FSTS),

S - firm size (natural logarithm of total sales),

L - financial leverage (debt ratio),

B₁, B₂, B₃ - industry dummies (Chemicals, Machinery and Electrical Equipment, Plastics respectively),

KZ - foreign ownership (dummy variable; KZ is equal to 1 if part of equity is owned by foreign investor),

η - random term.

In regression analysis, as in previous studies, impact of firm size, financial leverage and industry effect was controlled for. Firm size was measured by the natural logarithm of total sales, debt ratio (total debt/total assets) reflects impact of financial leverage. Foreign ownership effect was expressed as dummy variable equal to 1 if there is foreign non-financial enterprise which owns part of the firm's equity. Industry dummy variables encompassed B₁ = Chemicals, B₂ = Machinery and Electrical Equipment, and B₃ = Plastics. The residual industrial sector was represented by Pharmaceuticals.

The estimation procedure consisted of two phases. In phase 1, by removing the variables, for which the probability of type I error was highest (one at a time), a model with all variables significant at 10% level was estimated.

Next, in order to control for specificity of Polish firms' internationalization following macro-level variables were included into model specified in phase 1:

- import transaction price index (ITPI), as inward internationalization is traditionally more intensive in Polish firm than outward internationalization.
- real effective exchange rate – 36⁵ trading partners (REER) - nominal effective exchange rate deflated by nominal unit labour costs in total economy. Rise in the index means a loss of competitiveness.
- real GDP growth rate in Germany – main Polish trading partner.

The data was sourced from Eurostat and Polish Central Statistical Office (GUS).

Negative relationship between firms' performance and REER and ITPI variables, and positive impact of rise of German real GDP growth rate are expected.

Results and discussion

Descriptive statistics for the sample are reported in Table 2. Tables 3 and 4 summarize regression results for ROA and OCTS as dependent variables respectively. There are reported findings of panel EGLS, panel EGLS with cross-section fixed effects and panel EGLS with cross-section random effects as these methods has been applied in previous studies.

Figures 2 and 3 depict estimated relationships between FTFS and performance measured by ROA and OCTS respectively. Regression analysis indicates a significant non-linear link between companies' degree of internationalization and performance. Supporting hypothesis, evidence for a standard-U form of the relationship was found for performance measured by ROA and inverted-U shape for OCTS.

To identify maximum (and minimum) points partial derivatives were used. For ROA global minimum was estimated at about 69% FSTS. With respect to OCTS global maximum was identifies at 71% FTFS.

Financial leverage measured by ratio of total debt to total assets negatively affected firm's performance measured by ROA - debt costs lowered earnings of firms. In models 7 and 9 foreign capital positively affected cost ratio. This may be due to the fact that firms with foreign capital offer higher wages that firms with 100% domestic capital (Witkowska, 2000; Talar, 2008) as well as firm with foreign investor(s) participation are more likely to overvalue imports (transfer pricing mechanism).

The coefficient related to size of the firm in models 7 and 8 indicates scale advantages existence as rise in value of sales contributed to reduction of OCTS ratio.

Micro-level variables not reported in Tables 3 and 4 were not significant at 10% level.

Included macro-level variables were strongly significant in models explaining performance measured by ROA. Rise in REER and index of import transaction prices negatively influenced ROA, while level of real GDP growth rate in Germany was positively related to firms' performance in models 2, 4 and 6. Inclusion of macro-variables improved quality of models in terms of adjusted R-square and standard error of estimation as compared to models 1, 3 and 5 respectively.

In models with OCTS as a dependent variable, in most cases, macro-variables were statistically insignificant. In model 10 however, import transaction prices index contributed to rise in OCTS, whereas increase of German real GDP growth rate resulted in dependent variable reduction. The exchange rate remained statistically insignificant at 10% level. In this model adjusted R-square was higher and standard error of estimation lower than in model 9.

TABLE 1.2 Descriptive statistics for the full sample (N=225)

| Variable | Operationalization | Mean | Standard deviation | Minimum | Maximum |
|----------------------|----------------------------|-------|--------------------|---------|---------|
| Performance | ROA (%) | 6,25 | 10,79 | -49,22 | 43,83 |
| Performance | OCTS | 0,6 | 0,2 | 0,02 | 0,94 |
| Internationalization | FSTS (%) | 33,8 | | 0 | 98,88 |
| Firm size | Natural Logarithm of sales | 11,55 | 1,38 | 8,9 | 14,73 |
| Leverage | Total debt/total assets | 0,37 | 0,17 | 0,02 | 0,88 |

Source: Author's own calculation.

TABLE 1.3 Results obtained through regression analysis (ROA)

| | Panel EGLS | | Fixed effects | | Random effects | |
|----------------|--------------|--------------|---------------|------------|----------------|-------------|
| Model | (1) | (2) | (3) | (4) | (5) | (6) |
| Intercept | 10,124 *** | 92,078 *** | 10,649 *** | 76,802 *** | 14,473 *** | 109,363 ** |
| I | -0,181 *** | -0,226 *** | -0,139 ** | -0,153 *** | -0,146 ** | -0,162 ** |
| I ² | | | 0,001 ** | 0,002 *** | | |
| I ³ | 2,02E-05 *** | 2,59E-05 *** | | | 1,68E-05 * | 1,89E-05 ** |
| L | -12,903 *** | -13,247 *** | -6,270 *** | -8,782 *** | -13,194 *** | -14,813 *** |
| B ₁ | 5,406 *** | 6,709 *** | | | | |
| B ₂ | 4,506 *** | 5,604 *** | | | | |
| B ₃ | 3,852 *** | 4,427 *** | | | | |
| REER36 | | -0,285 *** | | -0,241 *** | | -0,372 ** |
| ITPI | | -0,553 *** | | -0,431 *** | | -0,586 * |
| Ger_GDP | | 0,810 *** | | 0,608 *** | | 0,860 * |
| Adj. R-squared | 42,0% | 45,1% | 71,8% | 72,2% | 5,8% | 10,8% |
| S.E. of regr. | 9,510 | 9,350 | 6,999 | 6,743 | 7,121 | 7,059 |
| F-stat. | 27,74 *** | 21,30 *** | 13,55 *** | 13,01 *** | 5,57 *** | 5,48 *** |

Notes: ***, ** and * denote significance at 1%, 5% and 10% respectively.

Source: Author's own calculation in EViews 6

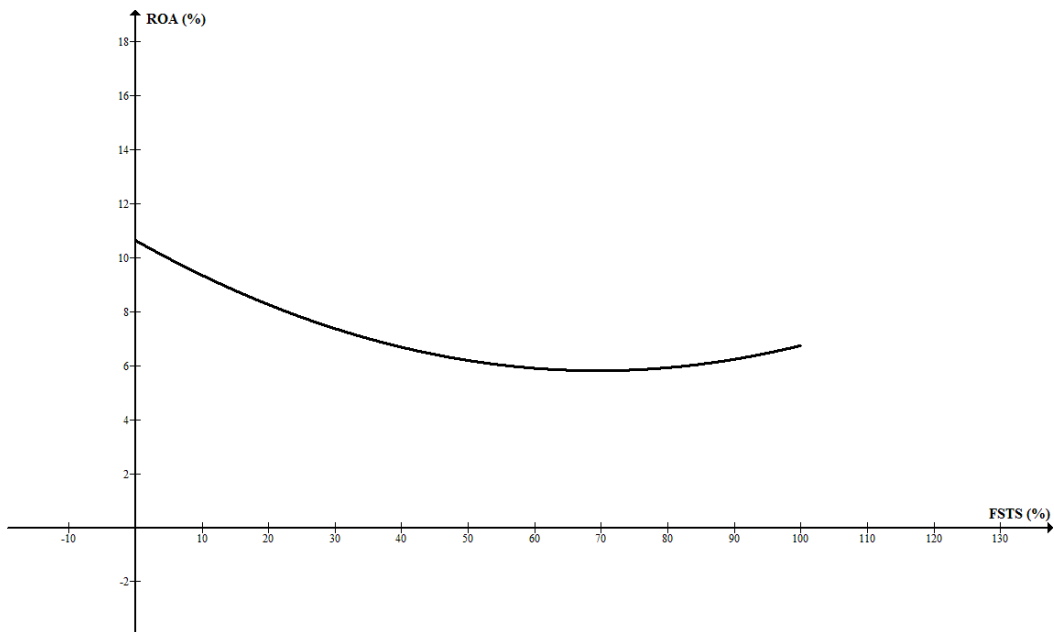
TABLE 1.4 Results obtained through regression analysis (OCTS)

| | Panel EGLS | | Fixed effects | | Random effects | |
|----------------|---------------|--------------|---------------|---------------|----------------|--------------|
| Model | (7) | (8) | (9) | (10) | (11) | (12) |
| Intercept | 0,839 *** | 0,372 | 0,448 *** | 0,207 | 0,425 *** | 0,013 |
| I | 0,004 *** | 0,003 *** | 0,007 *** | 0,007 *** | 0,006 *** | 0,007 *** |
| I ² | -3,00E-05 *** | -2,74E-05 ** | -5,01E-05 *** | -4,71E-05 *** | -4,28E-05 ** | -4,70E-05 ** |
| KZ | 0,121 *** | 0,121 *** | | | | |
| S | -0,033 *** | -0,032 *** | | | | |
| B ₁ | 0,181 *** | 0,184 *** | | | | |
| B ₂ | 0,049 *** | 0,056 *** | | | | |
| B ₃ | 0,224 *** | 0,230 *** | | | 0,205 *** | 0,204 *** |
| REER36 | | 0,002 | | 4,43E-04 | | 3,11E-04 |
| ITPI | | 0,003 | | 0,002 ** | | 0,004 |
| Ger_GDP | | 0,001 | | -0,006 *** | | -0,006 |
| Adj. R-squared | 56,1% | 52,4% | 98,7% | 99,2% | 11,9% | 13,1% |
| S.E. of regr. | 0,175 | 0,172 | 0,094 | 0,090 | 0,096 | 0,095 |
| F-stat. | 41,22 *** | 25,21 *** | 388,41 *** | 601,35 *** | 10,95 *** | 6,55 *** |

Notes: ***, ** and * denote significance at 1%, 5% and 10% respectively.

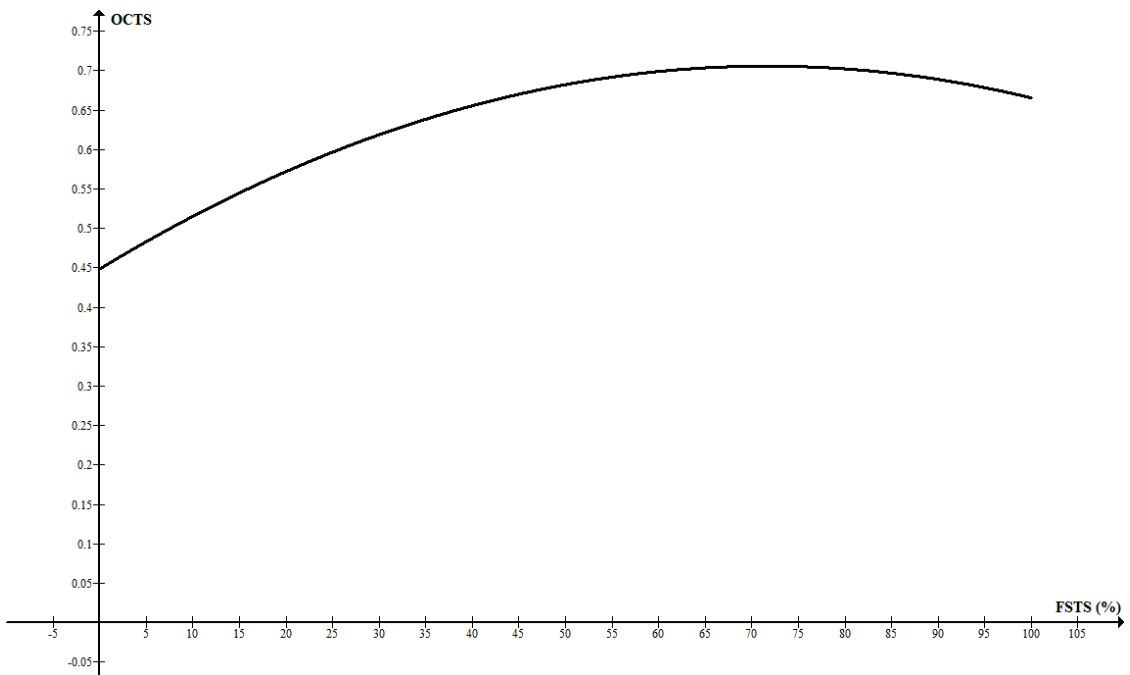
Source: Author's own calculation in EViews 6

FIGURE 1.2 Estimated U-shaped relationship for ROA



Source: Author's own calculation in Graph 4.3.

FIGURE 1.3 Estimated U-shaped relationship for OCTS



Source: Author's own calculation in Graph 4.3

Conclusion

The aim of the paper was to identify the shape of the relationship between a degree of internationalization and a performance of Polish manufacturing firms. Numerous empirical investigations have attempted to study the relationship providing mixed findings. This study is built on hypothesis concerning the existence of an integrative S-shape form in the internationalization-performance link (Contractor et al., 2003; Lu, Beamish, 2004). The results obtained through regression analysis of panel data suggest that in case of Polish multinationals, as expected, only a portion of the S-shaped curve is significant. Initially, internationalization has a negative impact on performance; however, over time, through gaining experience and through organizational learning, the benefits of international expansion outweigh the costs and firm performance improves. The standard U pattern has been confirmed for ROA (accounting-based measure of firm's performance) and inverted U in case of OCTS (operational, costs-based measure). As results of previous inquiries showed that the performance impact of internationalization is context dependent (Ruigrok, Wagner, 2004), set of three variables related to Polish firms' internationalization specificity was introduced. The regression results indicated that rise in real GDP growth rate in Germany, main Polish foreign partner, positively contributed to performance measured by ROA. The real effective exchange rate and import transaction price index negatively influenced profit performance. Added variables improved quality of models in terms of adjusted R-square and standard error of estimation. In case of OCTS explaining equations, only import transaction price index variable was significant at 10% level and contributed to OCTS increase.

This study results make an important contribution to the international business and management literature by having investigated that the internationalization-performance relationship on a sample of emerging market firms and has also important implications for managers. The initially high costs related to cultural differences, managerial inexperience in operating in foreign countries, transportation and logistical challenges as well as other disadvantages related to lack of knowledge, result in performance decline during the early stages of international expansion. Managers of Polish firms should be patient in waiting for benefits of international expansion. They can shorten time necessary to overcome the initial costs of foreignness by taking opportunities to learn from other firms which have engaged in international diversification. As they gain experience operating in foreign markets, the resulting organizational learning will facilitate increased internationalization (Thomas, Eden, 2004). Before companies start reaping benefits of internationalization firms need to reconfigure internal structures, systems, and processes to fit the new market environment (Ruigrok, Wagner, 2003). Passing successfully a period of learning, corporations experience a point of reversal and restore positive performance development.

This study is not without its limitations.

Restricting the sample of firms with certain characteristics (publicly-traded companies from certain branches) limits generalization of the study's findings. Future research efforts should validate the findings in broader context. I would also propose researchers to try to expand the applicability of existing internationalization theory on SME, as only a very limited number of studies have focused on small and medium-sized enterprises. Furthermore, future research is encouraged to make comparisons of the relationship between degree of internationalization and performance of Polish manufacturing and service firms. Future research might also examine inward side of internationalization process of Polish companies and its influence on outward internationalization as well as firm performance.

There are also some statistical limitations. Because of non-availability of other data, FSTS indicator was the DOI measure. It is strongly recommended to consider alternative operationalization techniques for this variable for future studies, covering geographical scope of internationalization and other than sales modes of entry into foreign markets. Furthermore, as Geringer et al. (2000) pointed that internationalization strategy has unstable performance implications over time, I suggest future research to capture the dynamics of relationships and utilize longer time series data. Finally, due to limited data availability, only limited variables were examined. Therefore in-depth studies on consequences of internationalization to Polish companies to gain more insight on this phenomenon are suggested. Their findings will be of special interest as multinationals from emerging countries (i.a. from Poland) continue international expansion and possibly, they will over-internationalize as some developed market firms (Thomas, 2006).

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1. The regulatory component reflects the existing laws and rules in a particular national or regional environment which promote certain types of behaviour and restrict others. The cognitive component reflects the widely shared, cognitive categories used by people in a given social entity. The normative component reflects culture, i.e., values, beliefs, norms, assumptions about human nature and human behaviour (Kostova 1998).
2. Contractor (2007) states: "with the exception of Riahi-Belkaoui (1998) who tested a 3-stage model without much theory development, no one had introduced the cubic term for DOI and tested for a S-shaped curve until Contractor and Newbert (2000), Newbert and Contractor (2001), Contractor, Kundu, and Hsu (2003), Lu and Beamish (2004), and Thomas and Eden (2004)". Works of Contractor and Newbert (2000), Newbert and Contractor (2001) are unpublished manuscripts.
3. After the World War II, Polish enterprises remained isolated from the world economy in terms of both foreign direct investment and trade. The foreign trade sector was monopolized by the State. The situation changed after political and economic reforms in the late '80s and early '90s.
4. i.e. least significant variables.
5. EU27 + 9 other industrial countries: Australia, Canada, United States, Japan, Norway, New Zealand, Mexico, Switzerland, and Turkey.

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